Claims

1. Method for determining paths (Pj(z)) in a communication network formed by links (L) for an optimized shortest-path routing relative to the network loading and a traffic volume (VM) expected for the communication network,
with
a) initial values for link costs (LK(L)) being allocated to the links (L),
b) optimum paths (Pi(z)) for the routing in the communication network being calculated relative to the link costs (LK(L)),
c) a parameter (V(L)) relative to the link traffic load being determined for the links (L) of the communication network for routing the expected traffic volume (VM) through the calculated optimum paths (Pi(z)),
d) the link costs (LK(L)) of the individual links (L) being changed as a measure of the parameter (V(L)) determined for the particular link in such a way that the link costs (LK(L) of a first link (L) are increased relative to the link costs (LK(L) of the second link, with a parameter value that is higher compared with a second link (L),
e) for the routing of the expected traffic volume (VM) through the subset of paths (Pj(z)) of the calculated paths (Pi(z)) that are optimized with respect to the changed link costs (LK(L)) the parameter (V(L)) relative to the link traffic load is determined for the links (L) of the communication network,
f) Steps d) and e) are run through until a termination criterion is fulfilled and
g) the subset of paths (Pj(z)) used during the last run through of step e) to determine the parameter (V(L)) relative to the link traffic load is used for the routing in the communication network.

2. Method in accordance with claim 1,
characterized in that
in step b), all paths (Pi(z)) for the routing in the communication network that are optimum relative to the initial values for the link costs (LK(L)) are calculated.

3. Method in accordance with claim 1 or 2,
characterized in that
the parameter (V(L)) is provided by the absolute traffic load, the traffic load relative to the link bandwidth, traffic-related costs occurring during the use of the link, the link availability, the run time of the particular link or the load capacity of final nodes of the particular link.

4. Method in accordance with one of the preceding claims,
characterized in that
the same initial values as chosen for the link costs (LK(L)) are chosen for all links (L).

5. Method in accordance with one of the preceding claims,
characterized in that
the paths (Pi(z)) are calculated using the ECMP (equal cost multipath) method.

6. Method in accordance with one of the preceding claims,
characterized in that
the change to the link costs (LK(L)) consists of multiplying the link costs (LK(L)) of a link (L) by a factor, with the factor being a measure of the loading of the link (L) relative to the average loading of the link.

7. Method in accordance with one of the preceding claims, characterized in that
the maximum of the parameter (V(L)) is determined each time the parameter (V(L)) relative to the link traffic load is determined in step e) and the procedure is terminated if the maximum of the parameter (V(L)) relative to the link traffic load is greater than during the preceding run in steps d) and e).

8. Method in accordance with claim 7, characterized in that
the process is not halted until it is additionally established that the subset of paths (Pj(z)) during the preceding run contains no alternative paths.

9. Method in accordance with claim 8, characterized in that
- the expected traffic volume (VM) is described by means of a traffic matrix and
- during a run through the traffic matrix is changed by means of small random values in relation to the entries in the random matrix, so that the subset of paths (Pj(z) contains no alternative paths.

10. Method in accordance with claim 7, 8 or 9, characterized in that
the subset of paths (Pj(z)) of the preceding run is used for routing in the communication network.

11. Method in accordance with one of the preceding claims, characterized in that
the expected traffic volume (VM) is described by means of a traffic matrix.